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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/037,337	12/21/2001	Richard L. Copeland	C4-599	5844

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EXAMINER
LEE, BENJAMIN C

ART UNIT	PAPER NUMBER
2632	3

DATE MAILED: 05/02/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/037,337	COPELAND ET AL.	
	Examiner	Art Unit	
	Benjamin C. Lee	2632	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 December 2001* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3 and 5-10* is/are rejected.

7)☒ Claim(s) *4* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *2* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

Claim Status

1. Claims 1-10 are pending.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. **Claims 1-3, 5-8 and 10** are rejected under 35 U.S.C. 103(a) as being unpatentable over Balch et al. (US pat #6,118,378) in view of Yoshizawa et al. (US pat. #5,567,537).

1) In considering claim 1:

a) Balch et al. teaches that electronic article surveillance systems (EAS) having a coiled or loop antenna for generating electromagnetic field to interrogate and detect electronic article surveillance markers are known in the art (Abstract and col. 1, line 7 to col. 3, line 5) which, when otherwise specified, inherently use conventional coiled/looped antennas having air-cores;

b) Yoshizawa et al. teaches that using a coiled antenna in an interrogation-response system wherein the coiled antenna has a core formed by a plurality of amorphous alloy ribbons insulated from each other and stacked to form a substantially elongated solid rectangular shape, with a coil winding of wire disposed around at least a portion of the core and insulated from the core, provides for an antenna of minimum size for generation of a given electromagnetic field having characteristics for effective interrogation as compared to convention coils (air-core type coils) (Figs. 1-3 and corresponding disclosure).

In view of the teachings by Balch et al. and Yoshizawa et al., it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to use the specific type of coiled antenna such as taught by Yoshizawa et al. for implementing the interrogation coil antenna of a system such as taught byBalch et al. in order to provide the intended antenna function but at a minimized size, wherein such minimized antenna size is desirable in various EAS applications by minimizing the physical presence, and thereby the associated physical and psychological intrusiveness and unsightliness of the system in typical application environments such as business establishments.

2) In considering claims 2-3, Balch et al. and Yoshizawa et al. made obvious all of the claimed subject matter as in claim 1, wherein:

--while Balch et al. and Yoshizawa et al. did not specify the same core dimensions (about 75 cm long, about 2 cm wide) and the number (about 60) of ribbons and each of their thickness (about 23 microns), and the wire gauge (24-gauge) and number of turns (90) for the coil as claimed, it would have been obvious to one of ordinary skill in the art at the time of the claimed invention that the electromagnetic interrogation field generated from the interrogation antenna in a system such as taught by Balch et al and Yoshizawa et al. depends on a variety of parameters including the antenna driving current, the gauge, length and conductivity of the coil wire as well as the number of turns for the coil, and the magnetic characteristics of the core including specific composition, dimensions and size of the core, and furthermore the desired interrogation field depends on the intended/expected size and dimension of the interrogation zone as well as the response characteristics of the marker. Therefore, the core dimensions, the number of ribbons and each of their thickness, the wire gauge and number of turns of the antenna

coil only account for some of the parameters for designing a particular intended application of a system such as taught by Balch et al. and Yoshizawa et al., and that such parameters can be chosen, including using the claimed parameter specification, in achieving the intended interrogation characteristics without unexpected results.

3) In considering claims 5-6, Balch et al. and Yoshizawa et al. made obvious all of the claimed subject matter as in claim 1, including:

--the claimed electronic controller (88, 100 of Balch et al.) and switching transmitting/receiving arrangement operating in sequential pulsed mode (Figs. 3-4 of Balch et al.).

4) In considering claims 7-8, Balch et al. and Yoshizawa et al. made obvious all of the claimed subject matter as in the consideration of claims 1 & 5, plus the plurality of antennas shown in Fig. 4 of Balch et al., and the claimed first and second antennas selected by the controller to operate in respective transmit only and receive only modes are met by the selective sequential operation description of Figs. 3-4 of Balch et al.

5) In considering claim 10, Balch et al. and Yoshizawa et al. made obvious all of the claimed subject matter as in the consideration of claim 7.

4. **Claims 1-3 and 7-10** are rejected under 35 U.S.C. 103(a) as being unpatentable over Martinides (US pat #5,371,490) in view of Yoshizawa et al.

1) In considering claim 1:

a) Martinides teaches that electronic article surveillance systems (Abstract and Fig. 1) having a coiled/looped antenna for generating electromagnetic field to interrogate and detect

electronic article surveillance markers (3, 210) are known in the art (Fig. 5) which, when otherwise specified, inherently use conventional coiled/looped antennas having air-cores;

b) Yoshizawa et al. teaches that using a coiled antenna in an interrogation-response system wherein the coiled antenna has a core formed by a plurality of amorphous alloy ribbons insulated from each other and stacked to form a substantially elongated solid rectangular shape, with a coil winding of wire disposed around at least a portion of the core and insulated from the core, provides for an antenna of minimum size for generation of a given electromagnetic field having characteristics for effective interrogation as compared to convention coils (air-core type coils) (Figs. 1-3 and corresponding disclosure).

In view of the teachings by Martinides and Yoshizawa et al., it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to use the specific type of coiled antenna such as taught by Yoshizawa et al. for implementing the interrogation coil antenna of a system such as taught by Martinides in order to provide the intended antenna function but at a minimized size, wherein such minimized antenna size is desirable in various EAS applications by minimizing the physical presence, and thereby the associated physical and psychological intrusiveness and unsightliness of the system in typical application environments such as business establishments.

2) In considering claims 2-3, Martinides and Yoshizawa et al. made obvious all of the claimed subject matter as in claim 1, wherein:

--while Martinides and Yoshizawa et al. did not specify the same core dimensions (about 75 cm long, about 2 cm wide) and the number (about 60) of ribbons and each of their thickness (about 23 microns), and the wire gauge (24-gauge) and number of turns (90) for the

coil as claimed, it would have been obvious to one of ordinary skill in the art at the time of the claimed invention that the electromagnetic interrogation field generated from the interrogation antenna in a system such as taught by Martinides and Yoshizawa et al. depends on a variety of parameters including the antenna driving current, the gauge, length and conductivity of the coil wire as well as the number of turns for the coil, and the magnetic characteristics of the core including specific composition, dimensions and size of the core, and furthermore the desired interrogation field depends on the intended/expected size and dimension of the interrogation zone as well as the response characteristics of the marker. Therefore, the core dimensions, the number of ribbons and each of their thickness, the wire gauge and number of turns of the antenna coil only account for some of the parameters for designing a particular intended application of a system such as taught by Martinides and Yoshizawa et al., and that such parameters can be chosen, including using the claimed parameter specification, in achieving the intended interrogation characteristics without unexpected results.

3) In considering claims 7-9, Martinides and Yoshizawa et al. made obvious all of the claimed subject matter as in claim 1, including:

--the claimed electronic controller and plurality of antennas (4 and antennas in Fig. 1 of Martinides) and transmitter and receiver means operating in non-pulsed mode (Abstract and Fig. 1 of Martinides, wherein no pulsed mode operation was disclosed, making the system inherently non-pulsed), and the claimed first and second antennas selected by the controller to operate in respective transmit only and receive only modes are met by the sequential operation description of Fig. 1 of Martinides.

3) In considering claim 10, Martinides and Yoshizawa et al. made obvious all of the claimed subject matter as in the consideration of claim 7.

Allowable Subject Matter

5. **Claim 4** is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

1) D'Hont, US pat. #5,625,366

--A similar use of stacked and insulated amorphous alloy core for a coiled antenna (Figs. 5-7).

2) Beigel, US pat. #5,499,017

--A similar interrogator antenna having coil over core and disclosure of how parameter alterations change antenna characteristics (col. 4, line 59 to col. 5, line 13).

3) D'Hont et al., US pat. #5,453,747

--A similar transponder system wherein an antenna can either be a air coil, coil with ferrous core, or coil with amorphous core (col. 4, lines 44-48).

4) Knebelkamp, US pat. #5,561,430

--A known use of magnetic core coil for marker interrogation/reader antenna (Figs. 1c & 4).

5) Mori et al., US pat. #6,304,182 B1

--A similar marker interrogation antenna coil having magnetic core.

6) Cole, US pat. #6,172,608 B1

--A similar marker interrogator coil antenna having magnetic core (Fig. 4).

7) Elder et al., US pat #3,665,449

--Another EAS marker interrogation antenna using magnetic core.

8) Matsushita, US pat. #5,220,338

--A similar magnetic cored antenna coil.

9) Johannessen, US pat. #6,014,111

--Another known use of magnetic core for antenna coil.

10) Rodgers et al., US pat. #6,351,215 B2

--A similar controller for plurality of interrogation antennas.

11) Lee, US pat. #6,307,517 B1

--A known implementation of marker interrogator using small sized antenna (coil 104).

12) Hash et al., US pat. #6,268,723 B1

--A similar antenna with magnetic core.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Benjamin C. Lee whose telephone number is (703) 306-4223. The examiner can normally be reached on Mon -Fri 11:00Am-7:30Pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel Wu can be reached on (703) 308-6730. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9314 for regular communications and (703) 872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-8576.

Benjamin C. Lee
Primary Examiner
Art Unit 2632

B.L.
April 30, 2003